SEQUENCE LISTING

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<120> PROTEIN EXPRESSION SYSTEM

<130> 01794100H406US1

<150> US 60/408,680
<151> 2002-09-06

<160> 18

<170> PatentIn version 3.1

<210> 1
<211> 173
<212> PRT
<213> Homo sapiens

<300>
<308> GenBank / P02489
<309> 1986-07-21
<313> (1)..(173)

<400> 1

Met Asp Val Thr Ile Gln His Pro Trp Phe Lys Arg Thr Leu Gly Pro
1 5 10 15

Phe Tyr Pro Ser Arg Leu Phe Asp Gln Phe Phe Gly Glu Gly Leu Phe
20 25 30

Glu Tyr Asp Leu Leu Pro Phe Leu Ser Ser Thr Ile Ser Pro Tyr Tyr
35 40 45

Arg Gln Ser Leu Phe Arg Thr Val Leu Asp Ser Gly Ile Ser Glu Val
50 55 60

Arg Ser Asp Arg Asp Lys Phe Val Ile Phe Leu Asp Val Lys His Phe
65 70 75 80

Ser Pro Glu Asp Leu Thr Val Lys Val Gln Asp Asp Phe Val Glu Ile
85 90 95

His Gly Lys His Asn Glu Arg Gln Asp Asp His Gly Tyr Ile Ser Arg
100 105 110

Glu Phe His Arg Arg Tyr Arg Leu Pro Ser Asn Val Asp Gln Ser Ala
115 120 125

```
Leu Ser Cys Ser Leu Ser Ala Asp Gly Met Leu Thr Phe Cys Gly Pro
    130                 135                 140

Lys Ile Gln Thr Gly Leu Asp Ala Thr His Ala Glu Arg Ala Ile Pro
145                 150                 155                 160

Val Ser Arg Glu Glu Lys Pro Thr Ser Ala Pro Ser Ser
                165                 170
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<210> 2
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<213> Homo sapiens

<400> 2

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gacgactttg tggagatcca cggaaagcac aacgagcgcc aggacgacca cggctacatt    180

tcccgtgagt tccaccgccg ctaccgcctg ccgtccaacg tggaccagtc ggccctctct    240

tgctccctgt ctgccgatgg catgctgacc ttctgtggcc ccaagatcca gactggcctg    300

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<210> 3
<211> 123
<212> PRT
<213> Homo sapiens

<400> 3

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Ser Leu Phe Arg Thr Val Leu Asp Ser Gly Ile Ser Glu Val Arg Ser
1               5                   10                  15

Asp Arg Asp Lys Phe Val Ile Phe Leu Asp Val Lys His Phe Ser Pro
            20                  25                  30

Glu Asp Leu Thr Val Lys Val Gln Asp Asp Phe Val Glu Ile His Gly
        35                  40                  45

Lys His Asn Glu Arg Gln Asp Asp His Gly Tyr Ile Ser Arg Glu Phe
    50                  55                  60

His Arg Arg Tyr Arg Leu Pro Ser Asn Val Asp Gln Ser Ala Leu Ser
65                  70                  75                  80
```

```
Cys Ser Leu Ser Ala Asp Gly Met Leu Thr Phe Cys Gly Pro Lys Ile
                85                  90                  95

Gln Thr Gly Leu Asp Ala Thr His Ala Glu Arg Ala Ile Pro Val Ser
            100                 105                 110

Arg Glu Glu Lys Pro Thr Ser Ala Pro Ser Ser
        115                 120
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<210> 4
<211> 147
<212> PRT
<213> Methanocaldococcus jannaschii

<400> 4

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Met Phe Gly Arg Asp Pro Phe Asp Ser Leu Phe Glu Arg Met Phe Lys
1               5                   10                  15

Glu Phe Phe Ala Thr Pro Met Thr Gly Thr Thr Met Ile Gln Ser Ser
            20                  25                  30

Thr Gly Ile Gln Ile Ser Gly Lys Gly Phe Met Pro Ile Ser Ile Ile
        35                  40                  45

Glu Gly Asp Gln His Ile Lys Val Ile Ala Trp Leu Pro Gly Val Asn
    50                  55                  60

Lys Glu Asp Ile Ile Leu Asn Ala Val Gly Asp Thr Leu Glu Ile Arg
65                  70                  75                  80

Ala Lys Arg Ser Pro Leu Met Ile Thr Glu Ser Glu Arg Ile Ile Tyr
                85                  90                  95

Ser Glu Ile Pro Glu Glu Glu Glu Ile Tyr Arg Thr Ile Lys Leu Pro
            100                 105                 110

Ala Thr Val Lys Glu Glu Asn Ala Ser Ala Lys Phe Glu Asn Gly Val
        115                 120                 125

Leu Ser Val Ile Leu Pro Lys Ala Glu Ser Ser Ile Lys Lys Gly Ile
    130                 135                 140

Asn Ile Glu
145
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<210> 5

<211> 150
<212> PRT
<213> Oryza sativa

<400> 5

Met Ser Leu Val Arg Arg Ser Asn Val Phe Asp Pro Phe Ser Leu Asp
1 5 10 15

Leu Trp Asp Pro Phe Asp Ser Val Phe Arg Ser Val Val Pro Ala Thr
20 25 30

Ser Asp Asn Asp Thr Ala Ala Phe Ala Asn Ala Arg Ile Asp Trp Lys
35 40 45

Glu Thr Pro Glu Ser His Val Phe Lys Ala Asp Leu Pro Gly Val Lys
50 55 60

Lys Glu Glu Val Lys Val Glu Val Glu Glu Gly Asn Val Leu Val Ile
65 70 75 80

Ser Gly Gln Arg Ser Lys Glu Lys Glu Asp Lys Asn Asp Lys Trp His
85 90 95

Arg Val Glu Arg Ser Ser Gly Gln Phe Met Arg Arg Phe Arg Leu Pro
100 105 110

Glu Asn Ala Lys Val Asp Gln Val Lys Ala Gly Leu Glu Asn Gly Val
115 120 125

Leu Thr Val Thr Val Pro Lys Ala Glu Val Lys Lys Pro Glu Val Lys
130 135 140

Ala Ile Glu Ile Ser Gly
145 150

<210> 6
<211> 158
<212> PRT
<213> Pisum sativum

<400> 6

Met Ser Leu Ile Pro Ser Phe Phe Ser Gly Arg Arg Ser Asn Val Phe
1 5 10 15

Asp Pro Phe Ser Leu Asp Val Trp Asp Pro Leu Lys Asp Phe Pro Phe
20 25 30

```
Ser Asn Ser Ser Pro Ser Ala Ser Phe Pro Arg Glu Asn Pro Ala Phe
        35                  40                  45

Val Ser Thr Arg Val Asp Trp Lys Glu Thr Pro Glu Ala His Val Phe
    50                  55                  60

Lys Ala Asp Leu Pro Gly Leu Lys Lys Glu Glu Val Lys Val Glu Val
65                  70                  75                  80

Glu Asp Asp Arg Val Leu Gln Ile Ser Gly Glu Arg Ser Val Glu Lys
                85                  90                  95

Glu Asp Lys Asn Asp Glu Trp His Arg Val Glu Arg Ser Ser Gly Lys
            100                 105                 110

Phe Leu Arg Arg Phe Arg Leu Pro Glu Asn Ala Lys Met Asp Lys Val
        115                 120                 125

Lys Ala Ser Met Glu Asn Gly Val Leu Thr Val Thr Val Pro Lys Glu
    130                 135                 140

Glu Ile Lys Lys Ala Glu Val Lys Ser Ile Glu Ile Ser Gly
145                 150                 155
```

<210> 7
<211> 145
<212> PRT
<213> Caenorhabditis elegans

<400> 7

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Met Ser Leu Tyr His Tyr Phe Arg Pro Ala Gln Arg Ser Val Phe Gly
1               5                   10                  15

Asp Leu Met Arg Asp Met Ala Leu Met Glu Arg Gln Phe Ala Pro Val
            20                  25                  30

Cys Arg Ile Ser Pro Ser Glu Ser Ser Glu Ile Val Asn Asn Asp Gln
        35                  40                  45

Lys Phe Ala Ile Asn Leu Asn Val Ser Gln Phe Lys Pro Glu Asp Leu
    50                  55                  60

Lys Ile Asn Leu Asp Gly Arg Thr Leu Ser Ile Gln Gly Glu Gln Glu
65                  70                  75                  80

Leu Lys Thr Asp His Gly Tyr Ser Lys Lys Ser Phe Ser Arg Val Ile
                85                  90                  95
```

Leu Leu Pro Glu Asp Val Asp Val Gly Ala Val Ala Ser Asn Leu Ser
100 105 110

Glu Asp Gly Lys Leu Ser Ile Glu Ala Pro Lys Lys Glu Ala Val Gln
115 120 125

Gly Arg Ser Ile Pro Ile Gln Gln Ala Ile Val Glu Glu Lys Ser Ala
130 135 140

Glu
145

<210> 8
<211> 188
<212> PRT
<213> Stigmatella aurantiaca

<400> 8

Met Ala Asp Leu Ser Val Arg Arg Gly Thr Gly Ser Thr Pro Gln Arg
1 5 10 15

Thr Arg Glu Trp Asp Pro Phe Gln Gln Met Gln Glu Leu Met Asn Trp
20 25 30

Asp Pro Phe Glu Leu Ala Asn His Pro Trp Phe Ala Asn Arg Gln Gly
35 40 45

Pro Pro Ala Phe Val Pro Ala Phe Glu Val Arg Glu Thr Lys Glu Ala
50 55 60

Tyr Ile Phe Lys Ala Asp Leu Pro Gly Val Asp Glu Lys Asp Ile Glu
65 70 75 80

Val Thr Leu Thr Gly Asp Arg Val Ser Val Ser Gly Lys Arg Glu Arg
85 90 95

Glu Lys Arg Glu Glu Ser Glu Arg Phe Tyr Ala Tyr Glu Arg Thr Phe
100 105 110

Gly Ser Phe Ser Arg Ala Phe Thr Leu Pro Glu Gly Val Asp Gly Asp
115 120 125

Asn Val Arg Ala Asp Leu Lys Asn Gly Val Leu Thr Leu Thr Leu Pro
130 135 140

```
Lys Arg Pro Glu Val Gln Pro Lys Arg Ile Gln Val Ala Ser Ser Gly
145                 150                 155                 160

Thr Glu Gln Lys Glu His Ile Lys Ala Tyr Pro Ala Pro Ala Glu Pro
                165                 170                 175

Gly Leu Ala Ala Pro Leu Gly Trp Pro Gly Phe Ser
            180                 185
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<210> 9
<211> 209
<212> PRT
<213> Mus musculus

<400> 9

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Met Thr Glu Arg Arg Val Pro Phe Ser Leu Leu Arg Ser Pro Ser Trp
1               5                   10                  15

Glu Pro Phe Arg Asp Trp Tyr Pro Ala His Ser Arg Leu Phe Asp Gln
            20                  25                  30

Ala Phe Gly Val Pro Arg Leu Pro Asp Glu Trp Ser Gln Trp Phe Ser
        35                  40                  45

Ala Ala Gly Trp Pro Gly Tyr Val Arg Pro Leu Pro Ala Ala Thr Ala
    50                  55                  60

Glu Gly Pro Ala Ala Val Thr Leu Ala Ala Pro Ala Phe Ser Arg Ala
65                  70                  75                  80

Leu Asn Arg Gln Leu Ser Ser Gly Val Ser Glu Ile Arg Gln Thr Ala
                85                  90                  95

Asp Arg Trp Arg Val Ser Leu Asp Val Asn His Phe Ala Pro Glu Glu
            100                 105                 110

Leu Thr Val Lys Thr Lys Glu Gly Val Val Glu Ile Thr Gly Lys His
        115                 120                 125

Glu Glu Arg Gln Asp Glu His Gly Tyr Ile Ser Arg Cys Phe Thr Arg
    130                 135                 140

Lys Tyr Thr Leu Pro Pro Gly Val Asp Pro Thr Leu Val Ser Ser Ser
145                 150                 155                 160

Leu Ser Pro Glu Gly Thr Leu Thr Val Glu Ala Pro Leu Pro Lys Ala
                165                 170                 175
```

Val Thr Gln Ser Ala Glu Ile Thr Ile Pro Val Thr Phe Glu Ala Arg
180 185 190

Ala Gln Ile Gly Gly Pro Glu Ala Gly Lys Ser Glu Gln Ser Gly Ala
195 200 205

Lys

<210> 10
<211> 173
<212> PRT
<213> Bos taurus

<400> 10

Met Asp Ile Ala Ile Gln His Pro Trp Phe Lys Arg Thr Leu Gly Pro
1 5 10 15

Phe Tyr Pro Ser Arg Leu Phe Asp Gln Phe Phe Gly Glu Gly Leu Phe
20 25 30

Glu Tyr Asp Leu Leu Pro Phe Leu Ser Ser Thr Ile Ser Pro Tyr Tyr
35 40 45

Arg Gln Ser Leu Phe Arg Thr Val Leu Asp Ser Gly Ile Ser Glu Val
50 55 60

Arg Ser Asp Arg Asp Lys Phe Val Ile Phe Leu Asp Val Lys His Phe
65 70 75 80

Ser Pro Glu Asp Leu Thr Val Lys Val Gln Glu Asp Phe Val Glu Ile
85 90 95

His Gly Lys His Asn Glu Arg Gln Asp Asp His Gly Tyr Ile Ser Arg
100 105 110

Glu Phe His Arg Arg Tyr Arg Leu Pro Ser Asn Val Asp Gln Ser Ala
115 120 125

Leu Ser Cys Ser Leu Ser Ala Asp Gly Met Leu Thr Phe Ser Gly Pro
130 135 140

Lys Ile Pro Ser Gly Val Asp Ala Gly His Ser Glu Arg Ala Ile Pro
145 150 155 160

Val Ser Arg Glu Glu Lys Pro Ser Ser Ala Pro Ser Ser
165 170

<210> 11
<211> 175
<212> PRT
<213> Bos taurus

<400> 11

Met Asp Ile Ala Ile His His Pro Trp Ile Arg Arg Pro Phe Phe Pro
1 5 10 15

Phe His Ser Pro Ser Arg Leu Phe Asp Gln Phe Phe Gly Glu His Leu
20 25 30

Leu Glu Ser Asp Leu Phe Pro Ala Ser Thr Ser Leu Ser Pro Phe Tyr
35 40 45

Leu Arg Pro Pro Ser Phe Leu Arg Ala Pro Ser Trp Ile Asp Thr Gly
50 55 60

Leu Ser Glu Met Arg Leu Glu Lys Asp Arg Phe Ser Val Asn Leu Asp
65 70 75 80

Val Lys His Phe Ser Pro Glu Glu Leu Lys Val Lys Val Leu Gly Asp
85 90 95

Val Ile Glu Val His Gly Lys His Glu Glu Arg Gln Asp Glu His Gly
100 105 110

Phe Ile Ser Arg Glu Phe His Arg Lys Tyr Arg Ile Pro Ala Asp Val
115 120 125

Asp Pro Leu Ala Ile Thr Ser Ser Leu Ser Ser Asp Gly Val Leu Thr
130 135 140

Val Asn Gly Pro Arg Lys Gln Ala Ser Gly Pro Glu Arg Thr Ile Pro
145 150 155 160

Ile Thr Arg Glu Glu Lys Pro Ala Val Thr Ala Ala Pro Lys Lys
165 170 175

<210> 12
<211> 196
<212> PRT
<213> Mus musculus

<400> 12

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Met Asp Val Thr Ile Gln His Pro Trp Phe Lys Arg Ala Leu Gly Pro
1               5                  10                  15

Phe Tyr Pro Ser Arg Leu Phe Asp Gln Phe Phe Gly Glu Gly Leu Phe
            20                  25                  30

Glu Tyr Asp Leu Leu Pro Phe Leu Ser Ser Thr Ile Ser Pro Tyr Tyr
        35                  40                  45

Arg Gln Ser Leu Phe Arg Thr Val Leu Asp Ser Gly Ile Ser Glu Leu
    50                  55                  60

Met Thr His Met Trp Phe Val Met His Gln Pro His Ala Gly Asn Pro
65                  70                  75                  80

Lys Asn Asn Pro Val Lys Val Arg Ser Asp Arg Asp Lys Phe Val Ile
                85                  90                  95

Phe Leu Asp Val Lys His Phe Ser Pro Glu Asp Leu Thr Val Lys Val
            100                 105                 110

Leu Glu Asp Phe Val Glu Ile His Gly Lys His Asn Glu Arg Gln Asp
        115                 120                 125

Asp His Gly Tyr Ile Ser Arg Glu Phe His Arg Arg Tyr Arg Leu Pro
    130                 135                 140

Ser Asn Val Asp Gln Ser Ala Leu Ser Cys Ser Leu Ser Ala Asp Gly
145                 150                 155                 160

Met Leu Thr Phe Ser Gly Pro Lys Val Gln Ser Gly Leu Asp Ala Gly
                165                 170                 175

His Ser Glu Arg Ala Ile Pro Val Ser Arg Glu Glu Lys Pro Ser Ser
            180                 185                 190

Ala Pro Ser Ser
        195
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<210> 13
<211> 22
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<220>
<223> oligonucleotide

<400> 13
tccctcttcc gcaccgtgct gg 22

<210> 14
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<400> 14
gctttgttag cagctcgagc cttaggacga g 31

<210> 15
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<400> 15
catatggacg tcaccaccgg aaccggaacc accggaacca ccgctagc 48

<210> 16
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<400> 16
ccagcacggt gcggaagagg gagctagcgg tggttccggt 40

<210> 17
<211> 107
<212> PRT
<213> Methanocaldococcus jannaschii

<400> 17

Thr Gly Ile Gln Ile Ser Gly Lys Gly Phe Met Pro Ile Ser Ile Ile
1 5 10 15

Glu Gly Asp Gln His Ile Lys Val Ile Ala Trp Leu Pro Gly Val Asn
20 25 30

Lys Glu Asp Ile Ile Leu Asn Ala Val Gly Asp Thr Leu Glu Ile Arg
35 40 45

Ala Lys Arg Ser Pro Leu Met Ile Thr Glu Ser Glu Arg Ile Ile Tyr
50 55 60

Ser Glu Ile Pro Glu Glu Glu Glu Ile Tyr Arg Thr Ile Lys Leu Pro
65 70 75 80

Ala Thr Val Lys Glu Glu Asn Ala Ser Ala Lys Phe Glu Asn Gly Val
85 90 95

Leu Ser Val Ile Leu Pro Lys Ala Glu Ser Ser
100 105

<210> 18
<211> 105
<212> PRT
<213> Bos taurus

<400> 18

Ser Pro Tyr Tyr Arg Gln Ser Leu Phe Arg Thr Val Leu Asp Ser Gly
1 5 10 15

Ile Ser Glu Val Arg Ser Asp Arg Asp Lys Phe Val Ile Phe Leu Asp
20 25 30

Val Lys His Phe Ser Pro Glu Asp Leu Thr Val Lys Val Gln Glu Asp
35 40 45

Phe Val Glu Ile His Gly Lys His Asn Glu Arg Gln Asp Asp His Gly
50 55 60

Tyr Ile Ser Arg Glu Phe His Arg Arg Tyr Arg Leu Pro Ser Asn Val
65 70 75 80

Asp Gln Ser Ala Leu Ser Cys Ser Leu Ser Ala Asp Gly Met Leu Thr
85 90 95

Phe Ser Gly Pro Lys Ile Pro Ser Gly
100 105